

APRIL/MAY 2025

**23UEBT32 — BIOINSTRUMENTATION  
(Elective III)**

Time : Three hours

Maximum : 75 marks

SECTION A — ( $10 \times 2 = 20$  marks)

Answer ALL questions.

1. Define pH.
2. What is phase contrast microscopy?
3. Define Beer Lamberts law.
4. What is wavelength range of various spectra?
5. Define Adsorption.
6. What is an anion exchanger?
7. Define radioactivity.
8. What are radioactive isotopes?
9. Differentiate between RCF and RPM.
10. What is a svedberg unit?





SECTION B — ( $5 \times 5 = 25$  marks)

Answer ALL questions.

11. (a) Explain the process of pH meter calibration.

Or

- (b) Explain the principle of microscopy in brief.

12. (a) Differentiate between absorption and emission spectra.

Or

- (b) Explain the concept of mass spectroscopy.

13. (a) How does HPLC work?

Or

- (b) Why are protein samples preprocessed before SDS-PAGE?

14. (a) What are the different types of radiation?

Or

- (b) How do you manage the radioactive materials?

15. (a) What are the different types of centrifuges?

Or

- (b) Why is density gradient centrifugation advantageous?

SECTION C — ( $3 \times 10 = 30$  marks)

Answer any THREE questions.

16. Write about the principles and application of compound microscopy.

17. Explain about NMR spectroscopy.

18. How is Gas chromatography used in separation of molecules? When is it used?

19. Explain the concept of GM counter?

20. Explain the concept of Differential centrifugation.

